

PATENT  
ATTORNEY DOCKET NO. 10668/002001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Paul A. DiTullio et al. Art Unit: 1649  
Serial No.: 09/247,246 Examiner:  
Filed : February 9, 1999  
Title : GENETIC MANIPULATION OF SPERMATOGENIA

Assistant Commissioner for Patents  
Washington, DC 20231

INFORMATION DISCLOSURE STATEMENT

Applicant submits the references listed on the attached form PTO 1449, copies of which are enclosed.

This statement is being filed after a first Office action on the merits, but before receipt of a final Office action or a Notice of Allowance. A check for \$240 in payment of the late submission fee of \$1.17(p) is enclosed.

Date of Deposit 02/09/99  
I hereby certify under 37 CFR 1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated above and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

LISA RODULIA

Please apply any additional charges or credits to  
Deposit Account No. 06-1050.

Respectfully submitted,

Date: 6/1/99

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Ingrid A. Beattie, Ph.D., J.D.  
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SUBSTITUTE FORM PTO-1449 (MODIFIED)		U... DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 10668/002001	SERIAL NO. 09/267,246
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary)  (37 CFR 1.98(b))		APPLICANT Paul A. DiTullio et al.		
		FILING DATE February 9, 1999		GROUP 1649

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL		PATENT NUMBER							ISSUE DATE	PATENTEE		CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA	4	8	7	3	1	9	1	10/1989	Wagner et al.		435	172.3	08/1986
	AB													
	AC													
	AD													
	AE													
	AF													
	AG													
	AH													
	AI													
	AJ													
	AK													

## FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION

		DOCUMENT NUMBER	PUBLICATION DATE	COUNTRY OR PATENT OFFICE	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	AL							
	AM							
	AN							
	AO							
	AP							

## OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

AQ	Brinster, R.L. et al., Proc. Natl. Acad. Sci. USA 82:4438-4442 (1985)
AR	Synder, B.W., et al., Mol. Reproduction and Development 40:419-428 (1995)
AS	Ebert, K.M. and J.P. Selgrath, in Applications in Mammalian Development, Cold Spring Harbor Laboratory
	Press, 1991

EXAMINER	DATE CONSIDERED

EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

SUBSTITUTE FORM PTO-1449 (MODIFIED)	L... DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 10668/002001	SERIAL NO. 09/247,246
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary) (37 CFR 1.98(b))		APPLICANT Paul A. DiTullio et al.	
		FILING DATE February 9, 1999	GROUP 1649

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EXAMINER INITIAL		PATENT NUMBER	ISSUE DATE	PATENTEE	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	BA						
	BB						
	BC						
	BD						
	BE						
	BF						
	BG						
	BH						
	BI						
	BJ						
	BK						

## FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION

		DOCUMENT NUMBER	PUBLICATION DATE	COUNTRY OR PATENT OFFICE	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	BL							
	BM							
	BN							
	BO							
	BP							

## OTHER DOCUMENTS (Including Author, Title, Date, Place of Publication)

BQ	Ebert, K.M. et al., Animal Biotechnology 1:145-159 (1990)	
BR	Osman, N., et al., Proc. Natl. Acad. Sci USA 94:14677-14682 (1997)	
BS		

EXAMINER

DATE CONSIDERED

EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICANTS: DiTullio, Paul  
ASSIGNEE: TransXenoGen, Inc.  
SERIAL NUMBER: 09/247,246 EXAMINER: R. Schnizer  
FILING DATE: February 9, 1999 ART UNIT: 1632  
FOR: GENETIC MANIPULATION OF SPERMATOGONIA

June 7, 2001  
Boston, Massachusetts

Assistant Commissioner for Patents  
Washington, D.C. 20231

**TRANSMITTAL LETTER**

Transmitted herewith for filing in the above-referenced patent application are the following documents:

- Supplemental Information Disclosure Statement (3 pgs.);
- PTO Form 1449(1 pg., in duplicate);
- Copy of eleven (11) references;
- Check No. 9115 for \$180.00; and
- Return Postcard.

If the enclosed papers are considered incomplete, the Mail Room is respectfully requested to contact the undersigned collect at 617-542-6000, Boston, Massachusetts. Although Applicants believe no fees are due in connection with this filing, the Commissioner is hereby authorized to charge any deficiencies to the undersigned's account, Deposit Account No. 50-0311, Ref. No. 21578-002.

Respectfully submitted,

  
Ingrid A. Beattie, Reg. No. 42,306  
Attorney for Applicant  
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EK611847615US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS: Paul DiTullio  
ASSIGNEE: TranXenoGen, Inc.  
SERIAL NUMBER: 09/247,246 EXAMINER: R. Schnizer  
FILING DATE: February 9, 1999 ART UNIT: 1632  
FOR: GENETIC MANIPULATION OF SPERMATOGONIA

June 7, 2001  
Boston, Massachusetts

Assistant Commissioner for Patents  
Washington, D.C. 20231

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Sir:

Pursuant to the duty of disclosure under 37 C.F.R. §§1.56, 1.97 and 1.98, Applicant hereby makes of record the documents listed below and on the attached modified Form PTO-1449 (submitted in duplicate) in the above-identified application, copies of which are submitted herewith. The order of presentation of the references should not be construed as an indication of the importance of the references.

**Other Prior Art – Non Patent Literature Documents:**

- CA Baccetti et al. (2000) "Conclusions", *Mol. Reprod. Dev.*, Vol. 56, pp. 329-330.
- CB Brinster et al. (1994) "Germline Transmission of Donor Haplotype Following Spermatogonial Transplantation", *Proc. Natl. Acad. Sci. U.S.A.*, Vol. 91, pp. 11303-11307.
- CC Brinster et. al. (1994) "Spermatogenesis Following Male Germ-cell Transplantation", *Proc. Natl. Acad. Sci. U.S.A.*, Vol. 91, pp. 11298-11302.
- CD Cappello et al. (2000) "hDAF Expression in Hearts of Transgenic Pigs Obtained by Sperm-Mediated Gene Transfer", *Transpl. Proc.*, Vol. 32, pp. 895-896.
- CE Hagmann, M. (1999) "Fertility Therapy May Aid Gene Transfer", *Science*, Vol. 284, pp. 1098-1099.
- CF Lai et al. (1997) "Generation of Transgenic Mice Expressing Human Tissue-type Plasminogen Activator in Mammary Glands by Transfected Spermatogonia In Vivo", In Annual Anthology of University of Agriculture and Animal Science, PLA., Changchun, p. 58.

- CG Lavitrano et al. (1999) "Human Decay Accelerating Factor Transgenic Pigs for Xenotransplantation Obtained by Sperm-Mediated Gene Transfer", *Transpl. Proc.*, Vol. 31, pp. 972-974.
- CH Maione et al. (1998) "Sperm-Mediated Gene Transfer in Mice", *Mol. Repr. And Dev.*, Vol. 50, pp. 406-409.
- CI Ogura et al. (1998) "Development of Normal Mice from Metaphase I Oocytes, Fertilized with Primary Spermatocytes", *Proc. Natl. Acad. Sci. U.S.A.*, Vol. 95, pp. 5611-5615.
- CJ Perry et al. (1999) "Mammalian Transgenesis by Intracytoplasmic Sperm Injection", *Science*, Vol. 284, pp. 1180-1183.
- CK Songsasen et al. (1998) "Live Mice from Cryopreserved Embryos Derived *In Vitro* with Cryopreserved Ejaculated Spermatozoa", *Lab. Anim. Sci.*, Vol. 48, pp. 275-281.

This Information Disclosure Statement is being filed more than three months after the filing date of this application and after the mailing date of the first Office Action, but before the mailing date of either a final action under 37 C.F.R. §1.113 or a Notice of Allowance under 37 C.F.R. §1.311.

- The fee of \$180.00 as set forth in 37 C.F.R. §1.17(p) is enclosed.
- The Applicant hereby certifies, as specified in 37 C.F.R. §1.97(e), that:  
(Check a or b below)
- a. Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign Patent Office in a counterpart for this application not more than three months prior to the filing of this Statement.
- b. No item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart for this application or, to the knowledge of the undersigned after making reasonable inquiry, was known to any individual designated in 37 C.F.R. §1.56(c) more than three months prior to the filing of this Statement.
- c. before the mailing date of a first Office Action on the merits in the above-identified case.

Accordingly, no fee or certification is required. 37 C.F.R. §1.97.

A copy of each of the above-identified information is enclosed unless otherwise indicated on the attached Form PTO-1449 (modified). It is respectfully requested that the Examiner consider completely the cited information, along with any other information, in reaching a

Applicant: DiTullio  
U.S.S.N.: 09/247,246  
Page 3

determination concerning the patentability of the present claims, and signs the enclosed form PTO-1449 to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application.

By submitting this Information Disclosure Statement, the Applicant makes no representation that: (1) a search has been performed, of the extent of any search performed, or that more relevant information does not exist; (2) the information cited in the Statement is, or is considered to be, material to patentability as defined in 37 C.F.R. §1.56(b); and (3) the information cited in the Statement is, or is considered to be, in fact, prior art as defined by 35 U.S.C. §102.

Notwithstanding any statements by the Applicant, the Examiner is urged to form his/her own conclusion regarding the relevance of the cited information. An early and favorable action is hereby requested. Please charge any additional fees that may be due, or credit any overpayment of same, to Deposit Account No. 50-0311, Reference No. 21578-002.

Respectfully submitted,



Ingrid A. Beattie, Reg. No. 42,306  
Attorney for Applicant  
MINTZ, LEVIN, COHN, FERRIS  
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Boston, Massachusetts 02111  
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Date: June 7, 2001

TRA 1524451v1

Express Mail N . EJ770262736US  
Date of Dep sit: September 27, 2000

Attorney Docket No. 21578-002

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICANT(S): Paul DiTullio  
SERIAL NO.: 09/247,246 EXAMINER: R. Schnizer  
FILING DATE: February 9,1999 ART UNIT: 1632  
TITLE: GENETIC MANIPULATION OF SPERMATOGONIA

Assistant Commissioner for Patents  
Washington, D.C. 20231

**TRANSMITTAL LETTER**

Transmitted herewith for filing in the present application are the following documents:

- Supplemental Information Disclosure Statement
- Form PTO 1449
- Copies of 1 Reference
- Return Postcard

Please charge any additional fees that may be due, or credit any overpayment of same, to Deposit Account No. 50-0311, Reference No. 21578-002. A duplicate copy of this Petition is enclosed.

Respectfully submitted,



Ingrid A. Beattie, Reg. No. 42,306  
Attorney for Applicants  
MINTZ, LEVIN, COHN, FERRIS,  
GLOVSKY and POPEO, P.C.  
One Financial Center  
Boston, Massachusetts 02111  
Tel: (617) 542-6000  
Fax: (617) 542-2241

Dated: September 27, 2000

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICANTS: Paul DiTullio  
ASSIGNEE: TranXenoGen, Inc.  
SERIAL NUMBER: 09/247,246 EXAMINER: R. Schnizer  
FILING DATE: February 9, 1999 ART UNIT: 1632  
FOR: GENETIC MANIPULATION OF SPERMATOGONIA

September 27, 2000  
Boston, Massachusetts

Assistant Commissioner for Patents  
Washington, D.C. 20231

**SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT**

Sir:

Pursuant to the duty of disclosure under 37 C.F.R. §§1.56, 1.97 and 1.98, Applicants hereby make of record the documents listed below and on the attached modified Form PTO-1449 (submitted in duplicate) in the above-identified application, copies of which are submitted herewith. The order of presentation of the references should not be construed as an indication of the importance of the references.

**Other Prior Art – Non Patent Literature Documents:**

- AB Yamazaki, Yukiko et al. (1998) "In Vivo Gene Transfer to Mouse Spermatogenic Cells by Deoxyribonucleic Acid Injection Into Seminiferous Tubules and Subsequent Electroporation" *Biology of Reproduction*, Vol. 55, pp. 1439-1444;

This Information Disclosure Statement is being filed more than three months after the filing date of this application and after the mailing date of the first Office Action, but before the mailing date of either a final action under 37 C.F.R. §1.113 or a Notice of Allowance under 37 C.F.R. §1.311.

- The fee of \$240 as set forth in 37 C.F.R. §1.17(p) is enclosed.
- The Applicant hereby certifies, as specified in 37 C.F.R. §1.97(e), that:  
(Check a or b below)
- a. Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign Patent Office in a counterpart for this application not more than three months prior to the filing of this Statement.
  - b. No item of Information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart for this application or, to the knowledge of the under signed after making reasonable inquiry, was known to any individual designated in 37 C.F.R. §1.56(c) more than three months prior to the filing of this Statement.
  - c. before the mailing date of a first Office Action on the merits in the above-identified case.

Accordingly, no fee or certification is required. 37 C.F.R. §1.97.

A copy of each of the above-identified information is enclosed unless otherwise indicated on the attached Form PTO-1449 (modified). It is respectfully requested that the Examiner consider completely the cited information, along with any other information, in reaching a determination concerning the patentability of the present claims, and signs the enclosed form PTO-1449 to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application.

By submitting this Information Disclosure Statement, the Applicant makes no representation that: (1) a search has been performed, of the extent of any search performed, or that more relevant information does not exist; (2) the information cited in the Statement is, or is considered to be, material to patentability as defined in 37 C.F.R. §1.56(b); and (3) the information cited in the Statement is, or is considered to be, in fact, prior art as defined by 35 U.S.C. §102.

Notwithstanding any statements by the Applicant, the Examiner is urged to form his/her own conclusion regarding the relevance of the cited information. An early and favorable action is hereby requested. Please charge any additional fees that may be due, or credit any overpayment of same, to Deposit Account No. 50-0311, Reference No. 14791-502.

Respectfully submitted,



Ingrid A. Beattie, Reg. No. 42,306  
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Boston, Massachusetts 02111  
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Fax: (617) 542-2241

Dated September 27, 2000  
TRADOC:1255248.1(QWK001!.DOC)

Modified Form 1449/PTO		Application Number	09/247,246
		Filing Date	February 9, 1999
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>		First Named Inventor	Paul DiTullio
(use as many sheets as necessary)		Group Art Unit	1632
		Examiner	R. Schnizer
		Attorney Docket Number	21578-002

U.S. PATENT DOCUMENTS								
Exam Initials	Cite No.	U.S. Patent Document No.	Issue Date	Name of Patentee(s) or Applicant(s)	Class	Sub Class	Filing Date If Appropriate	

FOREIGN PATENT DOCUMENTS					
Exam Initials	Cite No.	Foreign Patent Document Office Number	Name of Patentee(s) or Applicant(s)	Date of Publication	Translation Yes No

OTHER NON-PATENT LITERATURE DOCUMENTS		
Exam Initials	Cite No.	Name of Author, Title (when appropriate), Publication, Volume, Page(s), Date, Etc.
AB		Yamazaki, Yukiko et al. (1998) "In Vivo Gene Transfer to Mouse Spermatogenic Cells by Deoxyribonucleic Acid Injection Into Seminiferous Tubules and Subsequent Electroporation" Biology of Reproduction, Vol. 59, pp.

\* a copy of this reference is not provided as it was previously cited by or submitted to the office in a prior application, U.S.S.N. \_\_\_\_\_, filed \_\_\_\_\_, and relied upon for an earlier filing date under 35 U.S.C. §120 (continuation, continuation-in-part, and divisional applications).

Examiner Signature		Date Considered	
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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered.

Include copy of this form with next communication to applicant.